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IBM

**A Profile of
IBM Canada Ltd.**

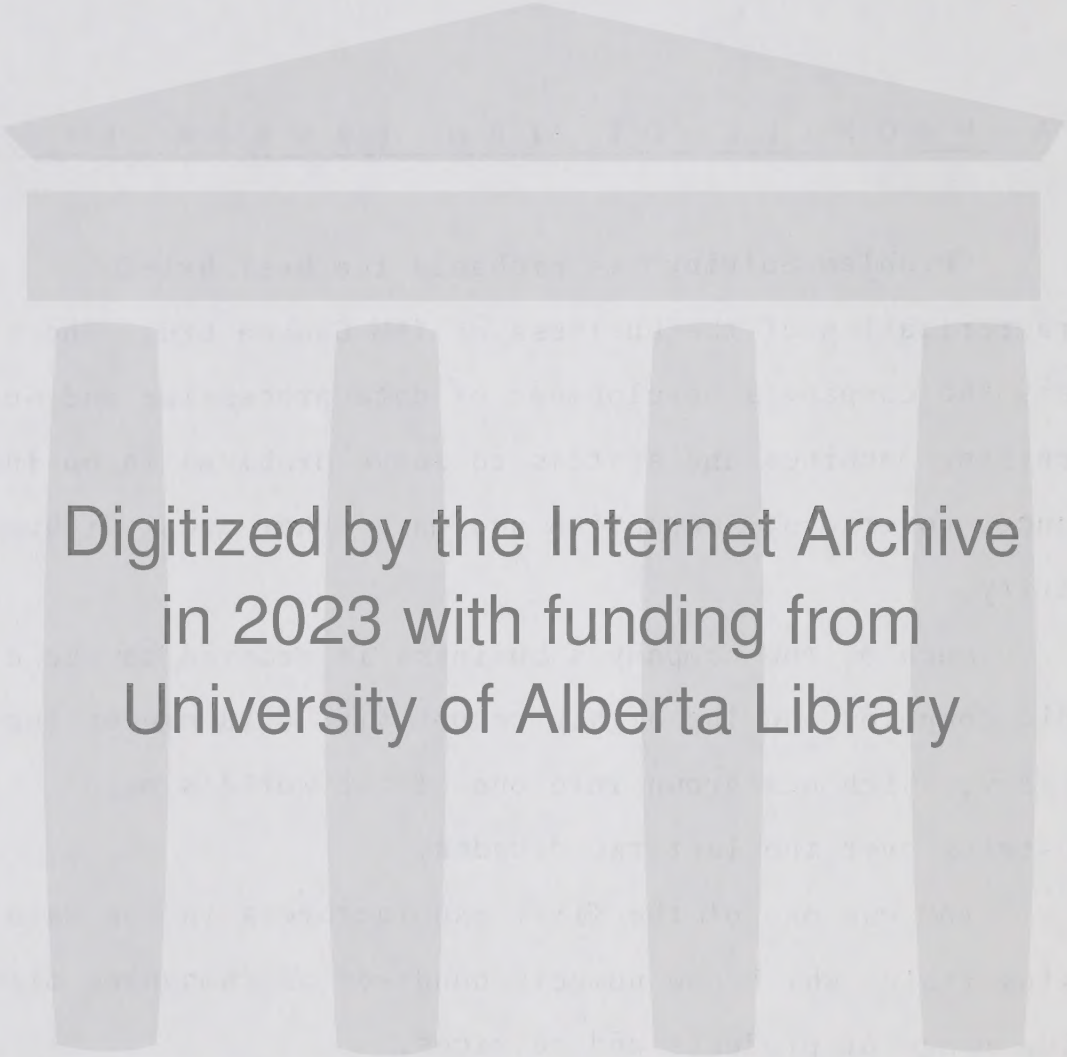
A P R O F I L E O F I B M C A N A D A L T D .

"Problem Solving" is probably the best brief characterization of the business of IBM Canada Ltd. The term covers the company's development of data processing and word processing machines and systems to solve problems in business, science, government, education and many other areas of human activity.

Much of the company's business is related to the electronic computer and the highly competitive data processing industry, which has grown into one of the world's major industries over the last two decades.

IBM was one of the first manufacturers in the data processing field, which now numbers hundreds of companies offering a wide range of products and services.

Throughout the industry's growth, IBM has developed new technologies, new equipment and new applications. This has not only lowered the cost of data processing for the user, but has also helped pave the way for a whole spectrum of new enterprises.



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Another major area of the company's business is word processing, using such office products as typewriters, dictation systems, copying and composing equipment.

IBM CANADA'S ORGANIZATION

Managed and staffed by Canadians IBM Canada Ltd. employs over 9,124 people. 2,860 are employed in manufacturing and development. 4,922 in branch locations across the country and 1,342 in Headquarters.

LOCATIONS

The company has 34 branch office locations to serve its customers.

Datacentres are located in 22 communities from Victoria to St. John's, Newfoundland, providing data processing services to companies who do not have their own installations or to perform special scientific projects or assist customers at peak periods. In 1969, a Canada-wide Datacentre Network was announced, linking all of the company's Datacentres through common carrier telecommunication facilities so that the power of the systems in the larger centres is now available to users anywhere in Canada.

The company also operates four Customer Education Centres in Vancouver, Toronto, Ottawa, and Montreal, offering a complete range of data processing courses to employees, customers and the general public. Four other locations are equipped for customer education.

Four Data Processing Support Centres equipped with specialized data processing facilities to service customer needs are also located in Vancouver, Toronto, Ottawa and Montreal.

MADE IN CANADA

The company operates three main manufacturing plants in Canada. Two of these - manufacturing data processing products and office products - are located in Toronto. The third plant - manufacturing micro-electronic circuit components - went into production in Bromont, Quebec, in January 1972.

The primary products manufactured in the Data Processing Plant are 029-059 key punches and verifiers, the 5496 punch for System/3 and the IBM 129 Card Data Recorder. These products are manufactured for the entire North American market and were a major contributor to IBM Canada's export program which totalled \$129 million dollars in plant production being shipped to 83 countries in 1971.

The company's Office Products plant produces "Selectric" and typebar electric typewriters, magnetic card typewriters, and film ribbons for typewriters. All of these products are marketed by the company's Office Products division. This plant is also the world supplier of the transport unit for the Magnetic Card Selectric Typewriter.

The output from the Office Products plant also contributes to the company's total export program with typewriters being shipped to 33 countries and dictation equipment to 44 countries outside Canada.

The IBM Plant in Bromont, Quebec, presently employs over 300 people and produces micro-electronic circuit components for use in IBM System/370 computers. The plant began manufacturing in January 1972. All of its production is exported to the United States.

IBM Canada also operates six plants for the manufacture of data processing cards to service local customer needs. These are located in New Westminster, Edmonton, Winnipeg, Toronto, Ottawa and Montreal. The card plants are a part of the company's Information Records Division which has the responsibility for manufacturing and marketing the full line of standard and special cards and paper documents.

PURCHASED IN CANADA

IBM Canada's policy is to procure from Canadian vendors whenever possible in keeping with the objective of achieving a high level of Canadian content in the company's manufacturing operations. In the last four years both the number of Canadian suppliers and IBM's purchases in Canada have increased by approximately 50%.

RESEARCH AND DEVELOPMENT

In December 1967, the company announced the opening of the IBM Canada Ltd. Laboratory. In addition to the development of advanced computer programs for world markets, the Laboratory develops custom equipment and programs to meet the unique requirements of the Canadian market. Considerable work has been done in the fields of process control, banking and insurance.

In 1971, the Laboratory announced a significant new computer program. Known as CSMP III (Continuous Simulation Modelling Program) it is used primarily in engineering design, and greatly reduces programming time through the use of graphic display units during computation. It can be used to simulate complex constantly-changing operations such as are found in oil refineries, gas wells and certain medical applications. This program is now available in all countries where IBM does business.

USES OF IBM COMPUTERS

Today IBM systems across Canada are used for such diverse tasks as sorting cheques, maintaining inventories, preparing payrolls, making airline reservations, monitoring oil refineries and power plants, helping farmers increase crop yields, controlling trans-Atlantic air traffic, assisting medical

research and controlling the production of automobiles and steel. In many such applications, the IBM systems collect data at remote locations and transmit it to central computers for processing.

Comprehensive railroad information systems connect traffic and yard offices from coast to coast to provide up-to-the-minute information on any rail-car over thousands of miles of track. A network of terminals stretches across Canada's western provinces to help control the shipment of grain to Great Lakes and West Coast ports to meet orders from all around the world.

Students in scores of Canadian high schools and colleges use terminals linked to central computers to help them learn data processing and to solve class assignments. Other students of various nationalities, most of them new arrivals in Canada, use computer terminals to aid them in learning English and French. In universities in Canada experiments are being conducted to determine how the computer can assist in easing the task of translating documents written in either of Canada's two official languages.

Engineers use computers in town-planning and subdivision design projects. Large national chain stores use the computer to bill customers and maintain sales and inventory records at their outlets across the country. Financial institutions of

all types use computers and terminals to link all of their offices across the country to maintain better day-to-day control of business.

IBM PRODUCT LINE

IBM produces hundreds of separate products, including:

- Electronic data processing systems for commercial and scientific use. IBM's principal general purpose computers are System/370 and System/360 -- which have many different compatible models -- and System/3, a low-cost computer designed for small businesses.
- A broad selection of program products that enable the user to apply his computer to many different applications.
- Electric typewriters, magnetic tape and card typewriters, dictation equipment and systems, copying equipment, and related supplies.
- Punched card accounting equipment and electronic typing calculators.
- Magnetic character sensing equipment and optical character readers.
- Process control computers for use in such industries as petroleum, utilities and primary metals.
- Peripheral products used with IBM computing systems, such as printers, terminals, tape units, and disk storage devices.

- Products and accessories used with data processing equipment, including magnetic tapes, disk packs, magnetic cards, data processing cards, and paper forms.
- Portable data recorders that can be adapted on-site to collect a broad range of information for direct entry into a computer.
- Composing equipment, utilizing the IBM single-element printing principle to provide direct-impression typesetting.

In 1964, IBM introduced System/360, a family of computer models for both business and scientific applications. The system's standard architecture allows customers to move from smaller to more powerful models as their data processing needs grow, with little or no change in their programming or data processing procedures.

In 1969, IBM introduced the low-cost System/3, featuring a new 96-column punched card, about one-third the size of the traditional 80-column card. Designed primarily for small business, the system can switch easily from business applications to complex mathematical problem-solving.

In 1970, IBM introduced System/370, an advanced computer family particularly suited for applications which use a large data base in remote computing or in information networks. System/370 is able to run programs developed for System/360.

Also announced in 1970 was the sensor-based System/7, developed for process, manufacturing, and laboratory applications.

61 YEARS IN CANADA

In Canada, the company's history dates back to 1911 with the merger of three subsidiaries of U.S. firms - the International Time Recording Company Limited, the Canadian Tabulating Machine Company and the Dayton Scale Company. The new firm called itself the Computing-Tabulating-Recording Company. Its Canadian headquarters was in Toronto. In 1917, the Canadian operation adopted the name International Business Machines Company Limited. The company's history officially dates from this time. This was also the first occasion when the initials IBM came into use anywhere in the world. (The company's present name IBM Canada Ltd. was adopted in 1968.)

The products marketed in the early days included a scale that computed prices; a machine for tabulating data in the form of punched holes in cards; and a clock that recorded time when a card was inserted into it. If any one factor linked these seemingly diverse products it was that they were designed to make business operations more efficient - by providing information rapidly and automatically. Only the simple tabulating card - first developed for the 1890 U.S. census - still remains as a widely-used feature and symbol of the industry.

IBM entered the electric typewriter business in 1933, when

it purchased Electromatic Typewriters, Inc. The first IBM electric typewriter was put on the market two years later.

The first general purpose digital computer, the Automatic Sequence Controlled Calculator, was completed in 1944 after six years of development work in cooperation with Harvard University Professor Howard Aiken. This was an electromechanical computer that used relays and tape-controlled programming devices. The machine was presented to Harvard by IBM.

This was followed in 1948 by the Selective Sequence Electronic Calculator. In 1952 the company introduced its first production computer, the IBM 701, for scientific computations. The 701 did 21,000 calculations a second. (Today the IBM System/370 - combining monolithic circuitry with significant advances in computer architecture - has operating speeds measured in a billionth of a second).

The first IBM computer to be installed in Canada was an IBM 650 installed in 1956 in Manufacturer's Life Insurance Company in Toronto. The Canadian Information Processing Society's annual census lists 3,548 computers installed in Canada as of May 1971.

IBM AROUND THE WORLD

IBM Canada is one of the major countries in the IBM World Trade Corporation, the organization which is responsible for manufacturing and marketing IBM products in 117 countries.

World Trade Corporation operates 22 plants in 13 countries and also has 8 development engineering laboratories.

In recent years, the international development of products has become a standard operating procedure in IBM. With System/370, announced in 1970, thousands of IBM people all around the world were involved. Researchers in Germany, Britain, France, and Sweden, for example, worked on 370's high-density miniature circuits and software. The final product itself reflected the results of a detailed study of the data processing needs of more than one thousand companies around the globe.

IBM World Trade plants in 13 different countries specialize in the manufacture of a small number of units or systems in order to derive the benefits of high volume production methods. These products are then shipped to other countries, either for final assembly or for installation in a customer's office. A good example of this "international approach" to manufacturing can be seen in IBM System/3 in which ten different manufacturing plants in eight different countries (Canada being one of them) produce the various components for each system. Because every effort is made to maintain worldwide uniform engineering levels the same high quality is built into these machines wherever they are produced.

The vast majority of people in IBM World Trade are nationals of the countries in which they work. Nationals of

any given country have the knowledge necessary to do business in their part of the world. They have a better understanding of their country's goals and objectives and they are more sensitive to them. At the same time, to gain experience in the larger "international" IBM, a program of foreign assignments is conducted to give employees in one country an opportunity to work in another country for a period of usually two or three years. At the moment, about 2,600 people are working in countries outside their own. Of these, more than 60 are Canadians, working in countries such as France, Iran, England and South Africa.

CAREER OPPORTUNITIES AT IBM CANADA

IBM Canada employs men and women qualified in a broad range of scientific, engineering, liberal arts and business disciplines.

The company is a major employer of university and post-secondary school graduates. Of more than 9,100 people, for example, 2,100 are university graduates, 1,550 are technical or business institute graduates. Approximately 40% of employees have a post high school education.

In terms of major scientific fields, the company's principal needs are in mathematics, engineering, physics, and computer science.

Engineering careers are in such fields as systems and product development, manufacturing research, mechanical

engineering, quality assurance, industrial engineering and electrical engineering.

In programming, the principal activities are systems and applications development and programming research.

Many other careers at IBM exist in such areas as marketing, equipment service, finance, personnel, administration communications, economics and accounting.

IBM AND EDUCATION

The step from college, technical school or high school into an IBM job, and continuing career development, is made possible by an extensive education and training program.

For example, data processing marketing people - those specializing in sales or systems engineering - spend a large part of their first year and a half with the company in classroom and on-the-job training. The typical customer engineer, who installs and services IBM computers, spends more than a month each year in company training programs.

In addition, IBM offers a wide range of Data Processing courses to its customers and the general public.

Major areas of education in the company's total program include computer systems and programming, management development, computer concepts for customer executives, language training and administrative training. A total of 270 different courses were offered in 1971 with 20,000 course

enrolments and 89,800 student days of tuition time being recorded. A staff of 176 people are dedicated to the company's education efforts. Education expenditures for 1971 exceeded \$7.5 million, the equivalent of the operating budget of a small university.

IBM also supports higher education through university building campaigns, fellowships for research, and joint programs for the development of advanced computer applications. In addition scholarships are provided to most Canadian universities to be used in assisting deserving students.

Allowances on the purchase or rental of IBM products are also provided to all universities and most other institutions of higher learning.

IBM EMPLOYEE BENEFITS

Through the years, IBM has developed a comprehensive program of benefits for its employees, completely paid for by the company. The program includes group life insurance and survivors' income, sickness and accident pay, total and permanent disability income, hospitalization, surgical and medical benefits, paid vacations and holidays, and a retirement plan.

All hourly-paid workers were put on a salary basis in 1958. The same year, company stockholders approved a plan that enables employees to purchase IBM stock at a discount through payroll deductions.

JUNE, 1972

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FACTS ABOUT IBM CANADA LTD.

IBM Canada is a wholly-owned subsidiary of IBM World Trade Corporation.

MAJOR PRODUCTS:

Data processing systems and supplies, office products and supplies, and cold-typesetting equipment.

OFFICES:

Headquarters: 1150 Eglinton Avenue East, Don Mills, Ontario.

Branch offices in 34 locations across Canada. 22 Data-centres across Canada.

4 Education Centres - Montreal, Ottawa, Toronto, Vancouver and 4 other facilities equipped for customer education.

4 Marketing Support Centres equipped with specialized data processing facilities to service customer needs.

LABORATORY:

IBM Canada Ltd. Laboratory: 1150 Eglinton Avenue East, Don Mills, Ontario.

PLANTS:

Data Processing Plant: 844 Don Mills Road, Don Mills, Ontario.

Office Products Plant: 60 Valleybrook Drive, Don Mills, Ontario.

Components Plant: 700 Airport Boulevard, Bromont, Quebec.

DP Modification Centre: 1177 Leslie Street, Don Mills, Ontario.

Card Plants: Don Mills, Edmonton, Montreal, New Westminster, Ottawa and Winnipeg.

PERSONNEL:

9,124 employed in Canada.

2,860 in manufacturing and development, 4,922 in branch offices, 1,342 in Headquarters.

INCOME: 1971 gross income: \$428,945,890. Net income: \$30,711,351.

EXPORTS:

\$129,459,832 in plant production exported to 83 countries in 1971.

FACTS ABOUT IBM WORLD TRADE CORPORATION

IBM World Trade Corporation, which conducts IBM business outside the United States in 117 countries, is a wholly-owned subsidiary of International Business Machines Corporation.

Major Products:

Data processing systems and supplies.

Office products and supplies.

451 Sales Locations.

260 Datacentres in 75 countries to service customer requirements. Large-scale systems and facilities are available at many of the locations through datacentre teleprocessing systems.

22 Plants in 13 countries:

France, Germany, Italy, the Netherlands, Sweden, United Kingdom, Canada, Argentina, Brazil, Colombia, Mexico, India and Japan.

IBM punched cards are manufactured in 50 locations in 41 countries.

Development Engineering laboratories in Austria, Canada, France, Germany, Japan, the Netherlands, Sweden and United Kingdom.

Education Centres in 78 cities in 41 countries including resident centres for customer executives in France (Orleans), Sweden (Lidingo), Mexico (Cuernavaca) and Japan (Amagi).

Over 116,000 employees, almost all of whom are nationals of the countries in which they work.

1971 IBM World Trade Corporation gross income: \$3,409,235,812.

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A Profile of IBM Canada Ltd.

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In the past two decades the information processing industry has experienced spectacular growth. The Canadian Information Processing Society reports that in the last 10 years alone the number of computers in Canada has increased from fewer than 500 to more than 4,000 in 1972. It is an industry that has been characterized by a steady flow of new products, dramatic technological developments and increasing occupational opportunities for Canadians. It is also an industry which offers much promise in its ability to help solve problems in our society.

IBM has been in business in Canada for over 60 years and during that time we have been staffed and managed by Canadians. Our Board of Directors includes a number of outstanding Canadians and we have benefited greatly from their advice and counsel.

In this booklet you will find examples of how our people and our products are helping Canada develop. We are pleased to be an integral part of the transfer of technology from the research laboratory to the working world where its practical applications have done much to bring about progress in Canada.

We believe that our contribution to the Canadian economy is considerable. Our plants and laboratory employ more than 2,800 Canadians. They in turn have created jobs for many more Canadians who supply us with a wide range of services and materials and components for our products. Our exports, which have been growing continuously in the past five years, amounted to over \$162 million in plant production shipped to 87 countries in 1972. In total we employ 9,000 people in all our facilities—plants, laboratory, headquarters, datacentres and branch offices—across Canada.

At the same time our contribution to Canadian society has been substantial. It is our firm belief that corporations have a responsibility to contribute to the welfare and well-being of the community, both financially and through human talents. In the following pages you will find some examples of recent contributions by IBM Canada and its people.

We're proud to be a part of an exciting, fast-paced industry which holds much promise for the future. In creating this profile of our company, its people and their activities, we hope to convey some of this excitement to you.

Lorne K. Lodge
President and Chief Executive Officer
November 1973

In 1972 IBM Canada's total revenue was \$491,285,450. Included in gross revenue were exports totalling \$162,003,417. Net income was \$37,162,824. These figures are a further continuation of the steady growth and the substantial contribution to the Canadian economy that has marked our progress in recent years. At the same time our balance of trade position has improved continually to provide a better relationship between our marketing and manufacturing activities.

Because of this healthy growth IBM is able to offer its people employment opportunities that cover a broad spectrum of activities. In manufacturing, for example, we have moved in the past five years from mainly assembly operations to complete involvement in development and manufacturing at almost all stages. This has considerably increased the technical knowledge and competence of our people in a broad spectrum of disciplines associated with the computer industry.

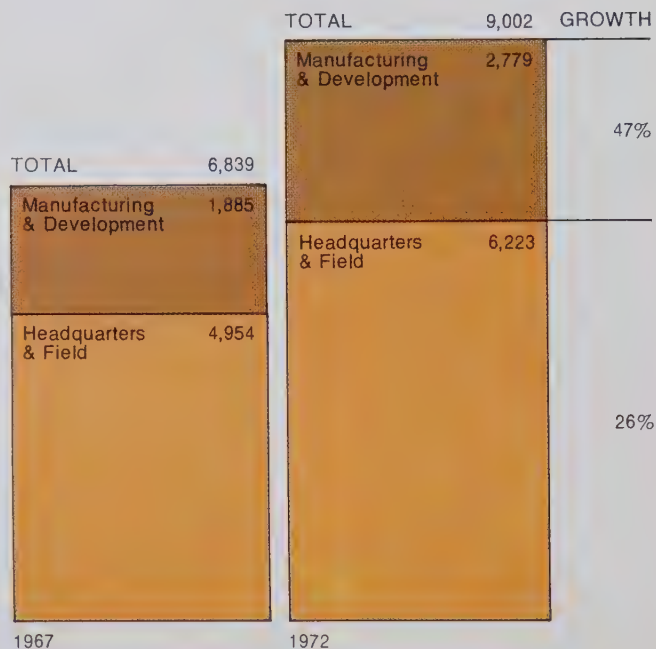
GROSS INCOME (\$ MILLIONS)



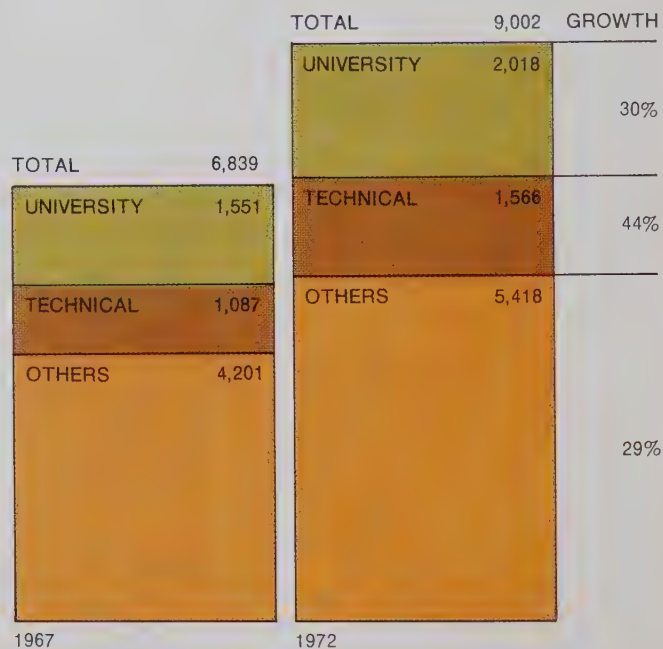
Gross income of IBM Canada has more than doubled in the past five years. One major factor in this increase has been the continuous growth in exports from our three major plants.

The marked growth in the size of the employee population has been outpaced by an even greater growth in the need for technically-trained people, reflecting the constantly-changing character of the business. While staff has increased in the past five years the demand for university and technical school graduates has increased more dramatically.

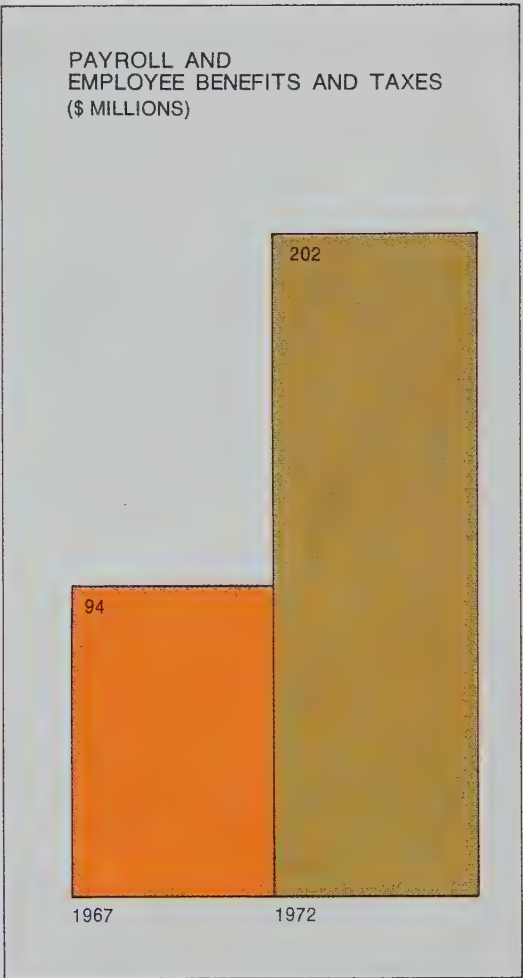
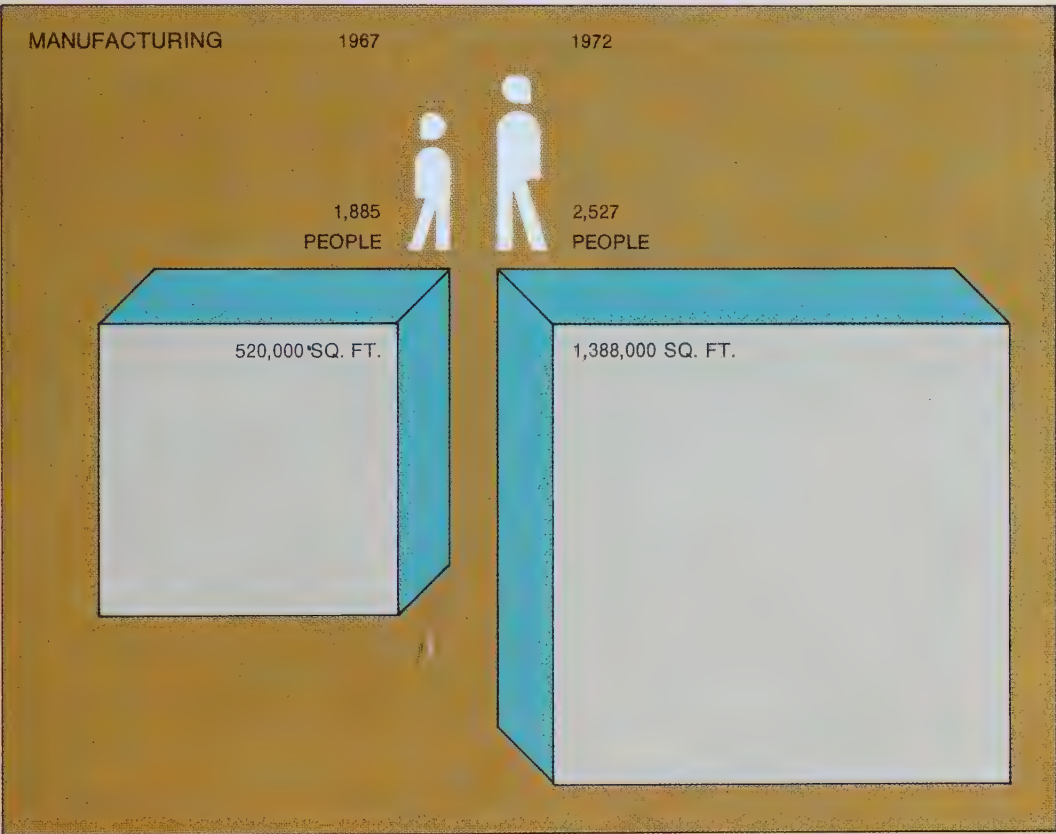
PERSONNEL



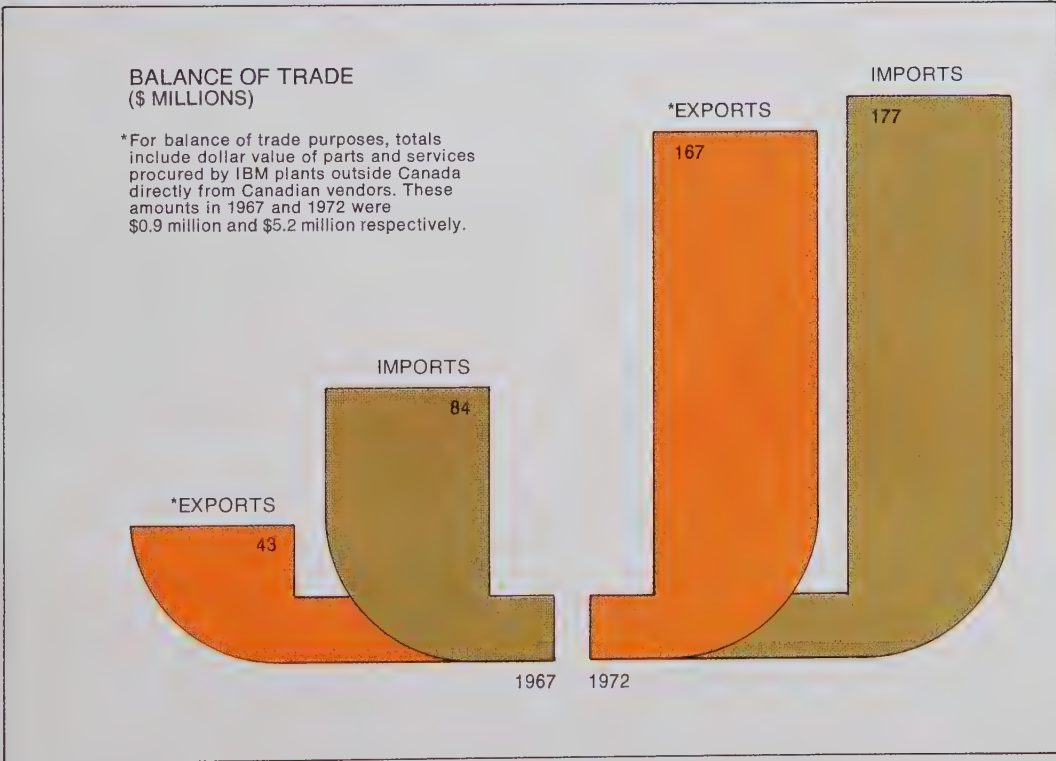
PROFESSIONAL LEVEL



The dominant theme in our manufacturing activities in the past five years has been one of steady growth. As the size and number of our plants have increased, so have the numbers of people employed in manufacturing. In 1967 we opened a plant in Toronto for the manufacture of our Office Products. This operation now employs 533 people. In 1970 we occupied a new 250,000 sq. ft. extension to our Data Processing Plant, also in Toronto. In January, 1972 we began production of electronic components in our 200,000 sq. ft. plant in Bromont.



Many components are included in IBM Canada's contribution to Canada's economy. Of these, payroll, employee benefits and taxes form the major portion.



The opening of two major plants since 1967 and the decision to specialize in the manufacture of key-entry devices in our Data Processing Plant were important moves in dramatically increasing our exports. This, as shown in the accompanying chart, has brought about a substantial improvement in IBM Canada's balance of trade picture.

THREE MAJOR PLANTS AND A LABORATORY

Visit any of our manufacturing plants in Canada and you'll find busy, modern production facilities. We've been manufacturing in Canada for almost 60 years. Today we have three major plants, a laboratory and six card plants. In total we employ approximately 2,800 people in manufacturing and development. Of these, over 250 are employed in the IBM Canada Laboratory where activities include both hardware and software development for Canadian and world markets.

We've always believed that it's our responsibility to establish a complete industrial organization with full manufacturing and development facilities as well as sales and service offices across the country. Our objective has been to maintain manufacturing and development consistent with the level of our marketing activities in Canada. In this way we have been able to contribute to Canada's economic and technological development.



A technician works on assembly of a computer terminal for a Canadian government installation.

The punched card is still a staple product as well as a symbol of the data processing industry after more than 80 years. Cards are seen here in manufacture in our Edmonton card plant, one of six such plants across Canada. They are a part of our Information Records Division, which manufactures and markets not only standard cards but many types of "special" cards for such uses as cheques, utility bills and airline boarding passes.

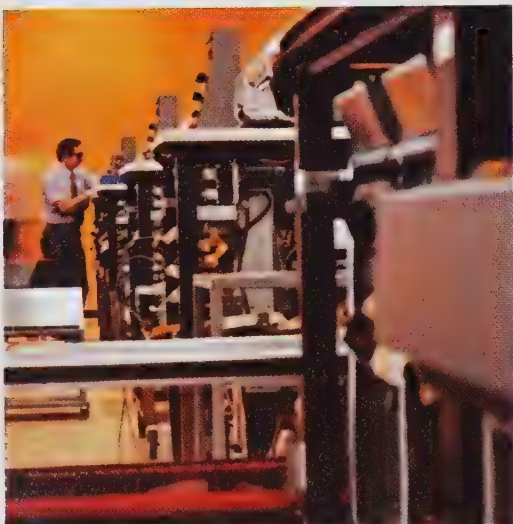


"Selectric" Typewriters in production at IBM's Office Products Plant in Toronto. Products manufactured here are "Selectric" and typebar electric typewriters, magnetic card typewriters and film ribbons, both for export and for Canadian customers. This plant is also the world supplier of a key component—the card transport unit—for the Magnetic Card "Selectric" Typewriter.



Through what is known as the "mission" concept IBM plants around the world specialize in the manufacture of a limited range of products for shipment to other countries as well as domestic markets. Thus they derive the benefits of large-volume production. In our Toronto Data Processing Plant, for instance, our mission is to produce data recording equipment. Since we adopted this approach in 1968 our exports have quadrupled.

Volume production also allows for volume buying of parts and raw material from outside suppliers, an increasing number of which are Canadian companies. This results in more jobs for Canadians. In addition to the 2,800 people in manufacturing and development at IBM, many more are employed by various suppliers in fulfilling contracts with IBM Canada.



In 1972 IBM Canada started production of a custom terminal for a new computer system for Canada's armed forces. The terminal, shown here in production, was designed in the Laboratory in Toronto. The Laboratory was opened in 1967. Since that time it has developed advanced computer programs for world markets and special custom equipment for Canadian customers.

Our plant in Bromont, in Quebec's Eastern Townships, went into production in January 1972 manufacturing micro-electronic circuit substrates—vital components in today's computers. Millions of substrates are shipped annually to the U.S.A. The working language at the plant is French. The majority of employees at Bromont are from the immediate area or from other parts of Quebec.



The 129 card data recorder production area in IBM's Data Processing Plant in Toronto. The IBM 129 is manufactured here for North American and European markets and is a significant contributor to the company's export program. Other products from this plant include 029 keypunches and 059 verifiers and the 5496 data recorder for System/3.



A technician in the Data Processing Plant checks a part from an outside supplier on a co-ordinate measuring machine in the Quality Assurance Department. A substantial number of people are employed supplying parts and material to IBM Canada's manufacturing program.



Typewriters for shipment to Latin American and Asian countries. IBM Canada's exports have increased fourfold in the past five years.



Spools of typewriter ribbons await packing in our Office Products Plant. The plant produces carbon ribbons for the Canadian market and for export to several European countries, the Caribbean and the Far East.

Our business is processing information—the lifeblood of today's complex society. Throughout Canada you can find our products at work—processing both words and data—in tasks so varied they often seem limited only by the human imagination.

The computer has become an almost universal tool. Whether it is used to help save lives in a hospital or to save time in preparing a payroll . . . to control the flow of air traffic across the Atlantic or to control a manufacturer's inventory . . . its ability to record, store, process and instantly retrieve information is creating new applications every day.

Once a device for specialists the computer is now used routinely by thousands of people such as doctors, librarians and engineers. Hundreds of thousands more people, as diverse as farmers, designers and food processors, are finding their work enhanced by the computer's ability to provide new and useful information. Even kindergarten students have used computer terminals as part of their schooling.

On these pages you'll find just a few samples of the hundreds of applications of our products across Canada—in many provinces and industries.



At de Havilland Aircraft in Toronto a System/370 is used to help co-ordinate the flow of parts to the shop floor, to maintain complex inventories and assist in manufacturing planning. The computer also helps smooth out the effects of fluctuations in the order-manufacture cycle which are characteristic of the aircraft industry. The company recently began a long-term program to further centralize all of its manufacturing and financial functions around the computer system.

In just a few years, Sept-Îles has grown from a remote fishing village on the Gulf of St. Lawrence to one of the most modern iron ore ports in the world. At the Iron Ore Company of Canada IBM has been a part of that growth by providing systems that monitor the complicated movement of ore cars on the single track railroad. As well, vital data on the contents of each car is transmitted to a System/370 in Sept-Îles which determines how the ore must be blended before the ships are loaded.

As soon as a calf is born at the Palmer Ranch in southwestern Alberta its vital statistics are logged in a System/3 computer. Its identity code, the ease of birth, the identity of its sire and dam and its birth weight become part of an on-going computer record. By collecting data on the performance of generations of blood lines and by controlling the mating of cattle through a sophisticated artificial insemination program the Palmers have been able to produce top-grade breeding stock for use by ranchers throughout North America.



Erin Mills in Mississauga, Ontario, with an area of 7,000 acres, is one of the largest comprehensively planned communities in Canada. In order to obtain maximum yield from the land and yet maintain its park-like quality, the Proctor & Redfern Group, engineering consultants, used a computer to determine the size and location of areas devoted to residential, industrial and park land. The result... a well planned, harmonious community of homes, parks, meeting places and shopping centres.

In hundreds of bank branches across the country, terminals developed in the IBM Canada Laboratory specifically for the Canadian banking industry have eliminated the tedious process of manually updating customers' bank books. Each terminal is connected to a central computer located in Toronto. The teller inserts the pass book in the terminal and keys in the transaction. Book and account are automatically updated. Not only is customer service improved, the terminal system is helping the banks to change the shape of their operational structure.



A computer at the University of Guelph has usually broken ground for Ontario farmers before the snow has left the fields. Soil samples are sent by farmers to the University's Land Resource Science Department for analysis and processing on a System/370 computer. The computer correlates the data and issues a formula for the type and amount of fertilizer needed to produce the crop the farmer wishes to plant next year. The result—higher yields from Ontario farms. This project is a co-operative effort between the Ontario Ministry of Agriculture and Food and the University's Land Resource Science Department.

Word processing is the technique of effectively moving words and ideas through an organization. One such advanced installation is the Calgary School Board, one of the largest boards in Canada, where word processing techniques have greatly enhanced administrative efficiency.

At the Gander Air Traffic Control Centre, two IBM 1800 control systems assist Department of Transport air traffic controllers in planning traffic flows across the North Atlantic. From a mass of data on aircraft points of origin and destination, departures, en route times, and weather and atmospheric conditions, these computers help select the safest and most economical routes available. At each of the Control Centres in Toronto, Montreal and Moncton, an IBM 1800 system provides timely data to controllers from prerecorded flight plan information, thus allowing controllers to concentrate on the actual control of air traffic. In Canada, last year, these systems helped to control more than 740,000 trans-Atlantic and domestic flights.



A shipbuilder in Saint John, New Brunswick, feeds the design specifications of each of his ships into a computer in IBM's local datacentre. Engineering calculations performed by the computer produce punched paper tapes which automatically command the cutting tools to accurately cut to size and shape every piece of steel required to build each ship.

In the Province of Quebec a computer network which provides information—on staff, students, budgets and space—is also assisting the Ministry of Education in future planning. Approximately 80 school commissions and CEGEPS (vocational schools) are linked by satellite computers and terminals to a central System/370 computer. Each day, thousands of students, teachers and school administrators throughout the province consult the computer system for schedules, report cards, payrolls, exam results, aptitude tests, statistics and loan and scholarship information.

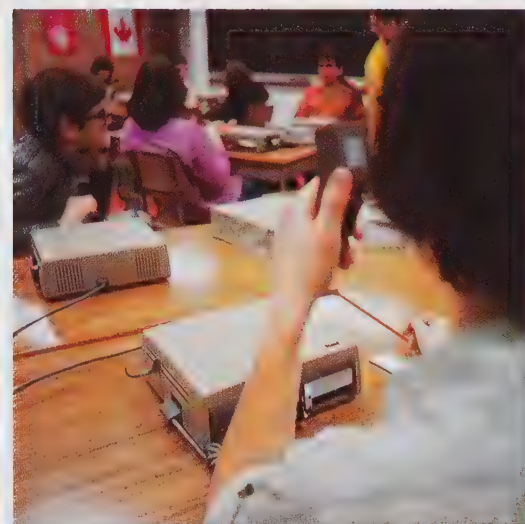
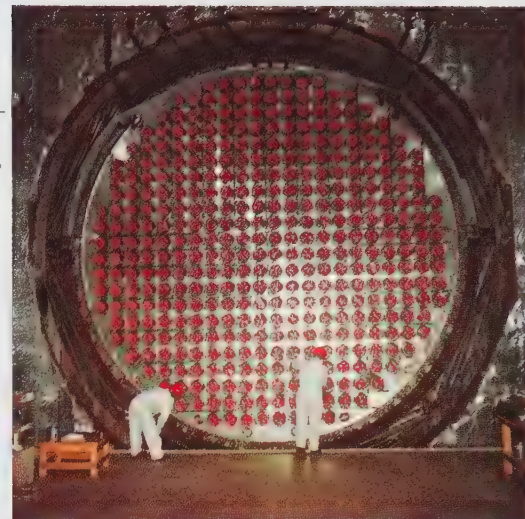


How do wallcovering manufacturers who introduce hundreds of new designs and colours each year spot their best sellers? At Sunworthy, a division of Canadian Wallpaper Manufacturers Limited, a computer rates the popularity of some 2,000 colours and designs using current sales information. The computer's fast trend-spotting ability helps avoid out-of-stock situations, thereby improving sales and service to domestic and foreign markets, and thus providing the home decorator with the wallcovering she wants when she wants it.

Doctors at Hôpital Sainte-Justine in Montreal are researching and diagnosing the heart conditions of small children, using a computer terminal as part of a unique approach to cardiac catheterization. A tube is inserted through the veins and arteries into the patient's heart and the pressure is monitored by electronic sensing devices. Masses of heart readings are sent via a time-sharing terminal to IBM's Ottawa Datacentre. Analyses, transmitted back immediately along telecommunications lines, are more precise and thorough than ever before possible.



Ontario Hydro's Pickering nuclear power station (on Lake Ontario) when completed will have an installed capacity of 2,160,000 kilowatts of power, which is equal to the electrical needs of about 1.7 million homes. The face of one of the four reactors is shown here. Information concerning the operation of the reactors is monitored by eight IBM process control computers, ensuring a safe, clean, and constant output of electrical power.



At a secondary school in Sarnia IBM's "Executary" Input Processing Units are used to improve oral reading and spelling skills. Teachers at the Alexander Mackenzie Secondary School—a vocational school for students with special education requirements—have found that recording and playing back a student's voice as he reads or spells acts as a strong incentive to learning. Various courses have been prerecorded on the dictation equipment so that lessons can be learned at the pupil's own speed.

Filling packages of sliced meat so that they weigh exactly the amount stated on the label requires the precise timing and speed of a System/7 computer at the J.M. Schneider Plant in Kitchener. Meat slices are produced at rates of more than 500 per minute while the computer, in conjunction with specially-designed weighing scales, calculates and constantly adjusts the thickness of the slices to make each package uniform.

An inquiring mind . . . unique skills . . . a talent for achievement: these are the special characteristics some 9,000 IBM employees in Canada bring to their jobs. Their goal is to provide superior products, services and solutions to information-processing problems of all kinds.

These men and women represent a broad spectrum of educational backgrounds and specialties which is typical of our employee team. Some work with the most advanced technologies; others specialize in manufacturing techniques; others are vitally concerned with providing the best possible service to the users of our products.

Irene Ferris in our Office Products Plant in Toronto is concerned with reducing noise pollution. Irene tests "Selectric" Typewriters manufactured for Canadian and world markets for acceptable sound levels. Like all of our products, each machine is subjected to rigid tests to ensure its complete acceptability in a customer's installation.



Vancouver-based Wayne Wilson's territory covers about 50,000 square miles and touches such Northern B.C. centres as Prince Rupert and Prince George. Wayne, a Marketing Representative, seen here awaiting a flight in Vancouver's International Airport, has two System/3 customers in Whitehorse, Yukon Territory. "There's a real drive to get things moving up there," he reports. "Because of the remoteness there's a definite need to be self-sufficient. I have to make sure the customers get the best possible training."

It was a proud moment for John Williams, Plant Construction Manager, when our Components Plant in Bromont, Quebec, started production on schedule. It was the culmination of two-and-a-half years' work. John's responsibilities were to co-ordinate the work of contractors, consultants, utilities and suppliers. John's background in civil engineering and naval construction helped him keep a tight rein on the project. "It was a tremendous satisfaction," he reports, "seeing the building take shape from the original concept."





Pierre Michaud is "Mr. IBM" to his many friends and customers around the Gaspé Peninsula. A Data Processing Field Service Representative, he covers some 700 miles a week making service calls on widely-scattered IBM installations in remote pulp and paper mills, copper mines, the local Caisse Populaire, and Canadian National Railways.

One of fifty Educational Service Representatives for our Office Products Division, Marie de Gagné helps her Montreal customers find the most efficient and economical solutions to office paperwork problems. Marie is a specialist in word processing systems. She conducts studies and recommends new procedures to help customers use their resources most effectively. "Word processing gives everyone in the office a chance to enlarge the scope of his or her job," she says.



In our plants a number of projects have been started to make individual jobs more interesting and challenging. Typical is the assembly of the card transport unit used in a System/3 computer. Alan Marks was a member of the team which investigated the possibility of discarding assembly line procedures for this product in favour of the "one man—one machine" concept. Each employee is now responsible for the complete assembly of a unit. The result—higher quality work and higher employee morale.





Peggy Sharp is seen here with her husband sailing in Vancouver Harbour. Peggy, a Systems Engineering Manager in our Vancouver Field Support Centre, led a marketing team in the development of a new computer program product that is giving smaller and medium-sized users more sophisticated flexibility in their systems. Peggy and her co-workers originally began the project to solve a problem for local customers and called their solution VANDL-I (Vancouver Data Language—I). Its capabilities were quickly recognized by others and VANDL-I is now marketed world-wide by IBM.



Rod Caskie, a Systems Analyst in the IBM Canada Ltd. Laboratory, was a key contributor in the development of CSMP III, a significant program product developed in Canada. It is now available world-wide, for the solution of engineering, medical, sociological and ecological problems. Says Rod, "With CSMP III, simulation time is dramatically reduced because of the opportunity for man and machine to work interactively."



Over 300 people are now working at our Bromont Plant, the majority of whom are from the local area. One of these is André Champagne, a Senior Associate Engineer responsible for all engineering changes related to power, lighting and communications systems in the new plant.

"People are our primary resource," says John Livingston, "and it's important that managers learn to apply management concepts with sensitivity to the human element." John, an instructor with our Management Development Program, regularly conducts classes, like the one seen here, for middle managers. 579 managers attended courses like this for a total of 2,621 student days in 1972.

No business organization exists in a vacuum. Rather, because of its size and influence we believe a corporation has many special responsibilities towards the community in which it operates.

In past years, IBM Canada has found numerous outlets and means of expression—in social concern, welfare and the arts. Like most other companies we support United Way campaigns, hospital building funds and cultural projects. To broaden the scope of our contributions even further and to encourage employee involvement we announced, in December 1972, The IBM Fund for Community Service. Through this program we make funds available to local community organizations in which our employees are actively participating. These may be groups concerned with social welfare, health, medicine, education, or scientific, civic or cultural affairs. If an employee is involved with such a group and a need exists for financial support for a specific project he or she may apply to us for the necessary funds. Many of our people immediately accepted this opportunity and identified new areas of participation where we are able to assist.



Financial support of the arts is an accepted part of corporate activity today. In December 1972, IBM Canada presented "The Sleeping Beauty" on CBC-TV, featuring the National Ballet of Canada. The program met with an enthusiastic reception from viewers across the country. The featured stars, Rudolf Nureyev and Veronica Tennant, are shown here in the wedding scene from the ballet.



Many fund-raising drives and institutional building campaigns are highly dependent upon corporate donations. In any given year IBM responds to numerous appeals from charities, cultural organizations, universities and hospitals across Canada. One of many to which we pledged support in 1972 was the Art Gallery of Ontario's Capital Fund Campaign which set out to raise \$6 million for a new building to be completed in 1974.

One of the most creative men in history was Leonardo da Vinci, among whose works are the paintings "Mona Lisa" and "The Last Supper". Leonardo also investigated every field of science and engineering and recorded his observations and insights in his voluminous notebooks. His inventions are the subject of an IBM travelling display dedicated to man's creative curiosity. The exhibit, seen by thousands of Canadians in recent years, shows working models built from Leonardo's original sketches. Shown here is a gear study for an early clock mechanism.



Helen Leider wanted to hire a hall and did just that in March—with some help from IBM. Helen who works in the Data Processing Division in Headquarters, is actively involved in The Crusade Against Leukemia, an organization which held a successful fund-raising auction at Toronto's St. Lawrence Hall in March. One small obstacle—the rental of the hall—was quickly removed when Helen applied to IBM's Fund for Community Service and became the first recipient of a grant under this newly-announced program.



From computer marketing to provincial legislature has been the career path of Emery Fanjoy, seen here in the New Brunswick Parliament Buildings, Fredericton. While an IBM branch manager he was granted a two year leave-of-absence to serve as Secretary of the Province's Treasury Board. The practice of bringing businessmen into decision-making positions in government started some time ago in New Brunswick to help foster a better understanding between the public and private sectors of the economy.

EDUCATION: A CONTINUING COMMITMENT

The highly technological nature of our business has demanded that our people maintain a high degree of competence in a constantly-changing field. The same need applies to the users of our products. As a result, we have always placed a high priority on education.

The company employs 100 full-time instructors and offers more than 360 different courses, plus a further 190 courses available via computer-assisted instruction terminals. In 1972, a total of 25,000 people—employees and customers—spent more than 90,000 student days in IBM courses. Almost \$7.5 million was spent by the company on education of employees and customers throughout the year.

The company's continuing interest in education is also reflected in other programs. Out of \$586,000, which represents 0.8% of net income before taxes, donated to social causes in 1972, a major portion went to such educational endeavors as university building funds and to scholarships and fellowships. More than 350 people in universities, technical schools and high schools across Canada were recipients of IBM grants of various types.

A total of 25,000 people attended one or more of 360 different IBM courses last year. Customer executives are a key group among this total. Here, attendees at an IBM Executive Computer Concepts Course in Toronto work out a simulated business problem on a 2260 video display terminal.



A forerunner of a learning centre of the future can be seen at the Ontario Science Centre in Toronto where education and entertainment are neatly blended. IBM's exhibit there achieves both—as it demonstrates the growth of data processing from Hollerith's early punched card machines to a modern airline reservation system.

An educator who envisions a future society where people will learn because they want to is Dr. Steve Hunka at the University of Alberta, Edmonton. Dr. Hunka is one of 35 people who received IBM Fellowships in 1972 to assist them in computer-related studies. A pioneer in computer-assisted instruction, he has helped to design successful projects to teach cardiology to medical students and to teach deaf children to read.

We hope that you have found this brochure interesting and informative. We have attempted to illustrate how we believe a company like ours contributes in many positive ways to the well-being of the community...

- as an employer of 9,000 Canadian citizens offering a wide variety of interesting and skilled jobs;
- as a major manufacturer and developer of information processing equipment and services for the solution of many of the problems of business, industry and government;
- as a multinational organization that has developed a full industrial complex complete with Canadian manufacturing and laboratory operations as well as sales and service locations in the belief that this is one of the most effective ways to demonstrate corporate citizenship;
- as a major exporter to world markets;
- as a purchaser of goods and services which make a contribution to the Canadian economy and to fuller employment in Canada;
- as a significant business organization directed and managed by Canadians;
- as an important agent in the transfer of technology, giving people in all parts of the country the opportunity to exploit the latest developments in information processing;
- and as a supporter of causes and programs in education, the arts and social betterment.



IBM